78.03

TEXAS Highways

MO

SAN JOSE DE AGUAYO

TEXAS MISSIONS • DECEMBER, 1955

DEL CARMEN

SAN FRANCISCO DE LA ESPADA

What's in a Name?

On U.S. 90 in south central Liberty County in District 20 is the town of Liberty. There's a long story behind this town. It is a lot like the stories of the pioneers who stuck it out and survived in spite of great odds against them. Liberty was settled by unauthorized squatters on the coastal leagues prior to 1830, when settlers along the Atascosito Road petitioned unsuccessfully to be included in Stephen F. Austin's colony. In 1831 Francisco Madero, land commissioner, established an office in the settlement and granted a few land titles for the town which was named Villa de la Santisima Trinidad de la Libertad (Town of the Most Holy Trinity of Liberty)—later shortened to Liberty. The settlement was not legalized by the state and the ayuntamiento was dissolved by Juan Davis Bradburn on December 10, 1831. But the municipality continued to exist, was represented at the Consultation in 1835, and was granted a post office in 1836. Liberty grew up along the banks of the Trinity River about 42 miles west of Beaumont. The population increased from 865 in 1900 to 4,163 in 1950.

About the Cover . . .

For 2,000 years the weight of tradition has been piling up behind the religious holiday we celebrate this month. Centuries and kingdoms have come and gone but the Christmas story is fresh and new every year to every generation. The Franciscan monks and their Indian helpers who built the churches appearing on our cover have long since been gone and forgotten but the monuments they constructed under incredible conditions in the Texas wilderness will survive through generations yet to come.

The purpose of these early Texas missions established by the Spanish crown was twofold—first, to convert the Indian and second, to extend, hold, and civilize the frontier. With the coming of American colonists in the 1830's many denominations were established in Texas, and the missions became secular Catholic churches.

These seven ancient structures are among the most beautiful of the Spanish mission churches in the state, and this month they will once again celebrate the Christmas story just as they have every year since the early padres first told the birthday story to the wild Texas Indians.

VOL. III

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TEXAS Highways

The purpose of this publication, "Texas Highways," is to furnish a medium for presenting practical ideas and information. Employees are invited and urged to submit suggestions and relate experiences which would benefit or be of interest to Highway employees. These conclusions and data are not necessarily endorsed by the Highway Department nor are they to be construed as instructions.

Photographic services are available and other assistance may be obtained, if desired, in preparing material for submission. All material and comments should be directed to the Information and Statistics Division, Austin 14, Texas.

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COMPILED AND EDITED
Information and Statistics Division

Do You Know Texas ?

The first large reservoir built in Texas, Lake Austin dates from 1890 when the first Austin Dam was built, and from the days of the old paddle-wheel river boat "Ben Hur" that carried sightseers up the lake from Austin. The first dam failed in the 1900 flood, was rebuilt in 1911-1912, then later was knocked out again by a flood. The present Tom Miller Dam, located within the western city limits of Austin, was constructed in 1940 by the Lower Colorado River Authority for flood control, electric power, and municipal water supply.

The lake, originally called Lake McDonald, is 21 miles long with a capacity of 20,000 acre feet. It is one of the five Highland Lakes following the Colorado River across Central Texas and offering numerous recreational facilities. And the lake still has a river boat, the "Commodore," a sternwheeler that makes chartered cruises up the lake from its docks near the dam.

This view of Lake Austin is from Mount Bonnell, a 775-foot hill on the outskirts of Austin. The Tom Miller Dam can be seen in the background.

HIGHWAY SYSTEMS OF TEXAS

George Carver, Assistant Manager
Highway Planning Survey Division

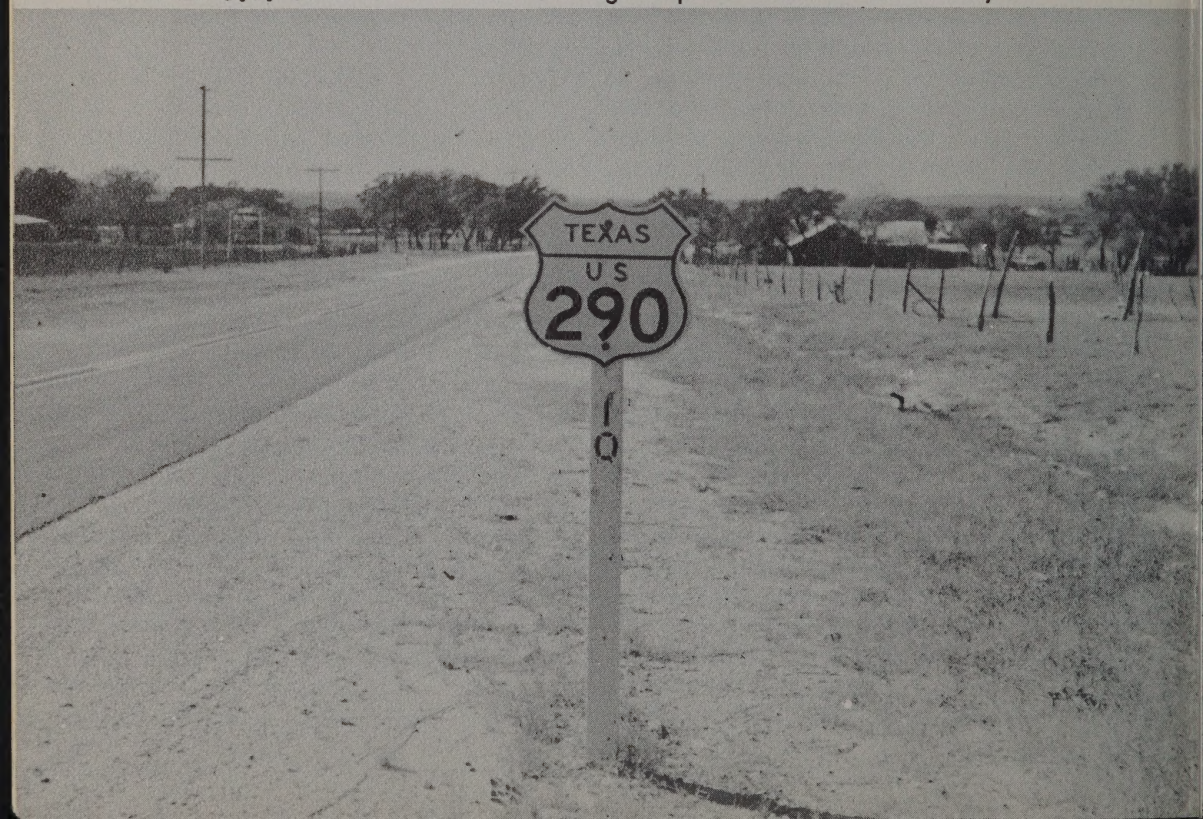
The various highway systems of our state are quite confusing to most laymen and even some of our own employees have a very vague comprehension of the picture. When the Federal Aid System is mentioned a person is likely to think of those highways bearing a U. S. shield along the edge of the roadway and which are usually denoted on highway maps by a prominent red line. This is definitely an erroneous conclusion. Likewise, the Federal Aid Secondary System usually brings to mind the farm-to-market roads that have spider-webbed over the state in the past decade to the extent of over 20, 000 miles. It is the intent of this article to analyze the highway systems of Texas with the hope of straightening out in the minds of the people the misconceptions that may now exist.

A. THE FEDERAL AID PRIMARY SYSTEM: The Federal Highway Act of 1916 provided for the selection of a Federal Aid Highway System which was to be eligible for federal aid in the construction of roads by matching State funds on a 50-50 basis. Mileage of the Federal Aid System was limited in each state to 7 per cent of the total rural road mileage in the state. This mileage could be increased by an additional 1 per cent when 90 per cent of the mileage on the Federal Aid System in a state was improved. Additional increments of 1 per cent would be eligible upon meeting similar conditions. The System is limited to roads maintained by the state highway department and were not to lose their identity as state highways. They were not required to be marked in any manner that would set them out in the minds of the people as federal highways.

B. THE FEDERAL AID SECONDARY SYSTEM: Along about 1944, the U. S. Government decided that the states needed financial aid on roads other than those included in the Federal Aid System but since there was a limit to the mileage of this system, some change would have to be made. Instead of removing the mileage limitation there was established a Secondary Federal Aid Highway System without mileage limitation except that no secondary money could be applied to a road within an urban area of 5, 000 or more population. The original Federal Aid System now is referred to as the Primary Federal Aid System. The Secondary System need not be limited to state-maintained highways as is the Federal Aid Primary System. However, in Texas it is, by agreement, limited to those

These old alphabets and arrows have been replaced by more flexible AASHO standard alphabets.

Standard U.S.-Texas route marker. Mileage on post is distance from county line.



New AASHO lettering and arrows appear on direction sign. Two lower route markers are still old style.

New signs on U.S. 290 one mile from Manor. Directional U.S. marker does not have Texas on it.

highways under state maintenance. The Secondary System carries the same ratio of federal aid as the Primary System; namely, 50 per cent state, 50 per cent federal money. In Texas, the Secondary Federal Aid System embraces both State highways (including those with U. S. numbers) and F. M. roads.

C. THE U.S. NUMBERED SYSTEM: In the early days of highway marking, every state adopted their own type of marking and selected numbers as they saw fit. This caused a cross-country traveler to change highway numbers each time his route crossed a state line. Eventually, there became evident a need for a uniform numbering system of important interstate highways that would enable a motorist traveling across the country to follow a minimum of highway numbers. The American Association of State Highway Officials, which is a national organization of just what the name implies, set up a system of uniform numbering of state highways extending from one state to another for the convenience of the traveling public. It adopted the U. S. shield as a symbol of this marking system which gave rise to the erroneous concept that this was a federal highway. There is no financial setup behind the U. S. numbering system as such and it should be borne in mind that a U. S. highway has the same status except for marking as a state highway. A U. S. highway may originate and end within a state but it is usually one of considerable length and offering a continuous travel route between important centers.

D. THE NATIONAL SYSTEM OF INTERSTATE HIGHWAYS: The National System of Interstate Highways was established by Congress to provide trunk-line highways across the U.S. to connect as direct as practicable metropolitan areas and industrial centers, with suitable connections at border points with roads of continental importance in Canada and Mexico. It is limited to a total of 40, 000 miles, of which approximately 2, 800 miles lie in Texas. One of the principal objectives of this system is to serve the national defense. This system is largely in the formative stages of development and will carry some special concessions from the Federal Government as to financing. At present, the basis is on the ratio of 60 per cent Federal to 40 per cent State money.

E. STATE HIGHWAYS: These are the highways marked by plain rectangular signs although any state highway may become a part of the U. S. Numbered System in which case it loses its state identity in favor of the U. S. number for the convenience of the long-distance traveler. It was formerly the practice to identify a highway by both its state and U. S. numbers in the event that it was included in the U. S. Numbered System, but the policy of single numbering was established for simplicity.

F. F.M. ROADS: F.M. roads are built and maintained by the State Highway Department but carry markers of different design from other state highways. They are principally land service roads and are usually constructed to a lower design standard because of their lighter traffic requirements.

The designation of roads to be a part of the Federal Aid Primary, Secondary, and Interstate Systems comes about by action of the State Highway Commission and approval of the U. S. Bureau of Public Roads. Federal participation is limited in all cases to highway construction. The Federal Government does not participate in the maintenance cost of any state highway. The designation of state highways and farm-to-market roads is a function of the Highway Commission.

In conclusion, it should be borne in mind that Federal Aid Systems are established purely for purposes of

finance and not for the information and guidance of the traveling public. In contrast the U.S. numbered highways, whose designations are approved by the A. A. S. H. O., are marked entirely for the convenience of the travelers and involve in no manner matters of finance. Park roads, loops, and spurs have not been mentioned in this article because their functions are self-explanatory.

No attempt has been made to thoroughly go into financing as this is a subject in itself.

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Personnel Changes

H. L. Arno, Director of Personnel

District 2

County Residency, Fort Worth: Clarence S. Tilley changed from Senior Resident Engineer to Resident Engineer September 1, 1955.

District 4

Expressway, Amarillo: Robert G. Schlinkman changed from Resident Engineer to Senior Designing Engineer September 1, 1955.

District 18

County Residency, Corsicana: Lon C. Ingram Jr., Senior Resident Engineer, passed away September 20, 1955.

County Residency, Dallas, to County Residency, Corsicana: George F. Mann, Senior Designing Engineer, transferred as Senior Resident Engineer October 1, 1955.

County Residency, Dallas, to District Headquarters, Dallas, William E. Williams, Senior Resident Engineer, transferred October 4, 1955.

Bridge Division, Austin

Pat W. Clark, Special Bridge Designing Engineer, resigned September 19, 1955.

M. D. Shelby, Senior Soils Engineer, transferred to Road Design Division, Austin, as Supervising Research Engineer November 1, 1955.

Road Design Division, Austin

Sterling W. Adair changed from Designing Engineer to Senior Designing Engineer November 1, 1955.

Hubert A. Henry changed from Geologist to Senior Geologist November 1, 1955.

Frank H. Scrivner, Supervising Research Engineer, resigned September 1, 1955.

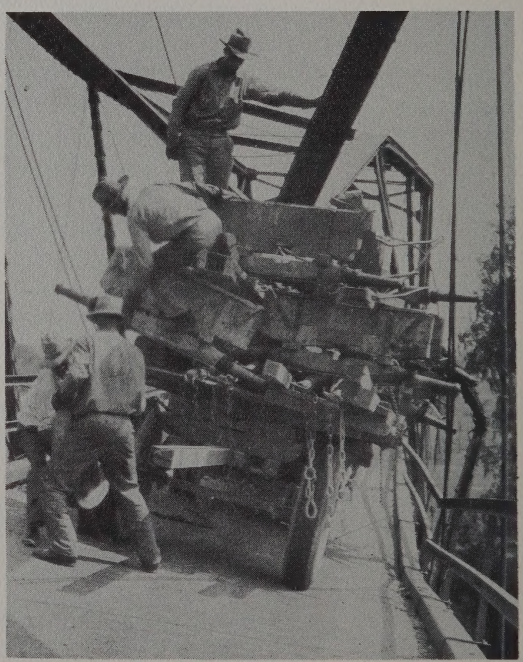
Problems of Yesterday

Information submitted by John E. Blair, District Engineer, District 17

Back in the early part of this century when the automobile was considered just a passing fancy that would never replace the horse, highways and bridges were built to carry buggies and farm wagons. Who could foresee our nearly four million motor vehicles of today with their ever-increasing weights and speeds?

As early as 1929 or so, highway engineers were beginning to discover that bridges built only a relatively short time before could not support the loads that motor-driven vehicles were capable of hauling. Districts—or divisions as they were then called—all over the state were having the bottom drop out from under them as bridge after bridge went down, victims of either old age or overweight or both.

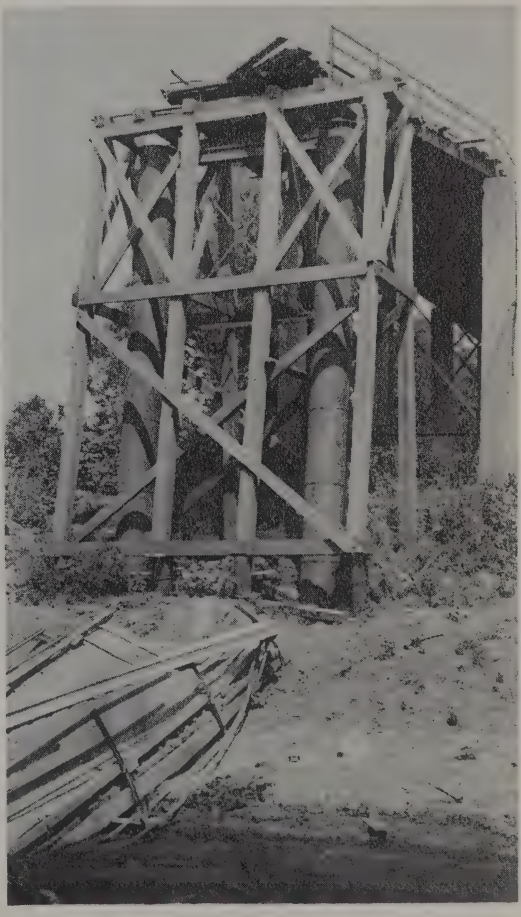
These photographs show the collapse of an old bridge on State Highway 6 just north of Navasota sometime around 1929. A truck belonging to the



Truck crew scrambles desperately to jettison load in attempt to stop bridge collapse.

Truckers venture back onto sagging structure to attempt to save vehicle.

Top chord of bridge landing on truck saved bridge from complete collapse temporarily.



Bridge sheared off pair of metal shell piles.

Attempts to pull truck free caused final destruction of bridge.

Collapsed structure was replaced in few days by temporary crossing.

Joe D. Hughes Company struck one of the vertical members of the truss. It was lightly loaded, so in this case the bridge failure was not due to overload. The truss started to collapse, but as shown in the first three photographs the top chord landed on top of the load which arrested the fall of the bridge.

The structure remained in this condition for about 24 hours, and was finally brought down when the trucker attached a winch line to the loaded truck and attempted to pull it free. Ed Bluestein, who was in Division 17 at that time, was present on the bridge when the collapse started, but escaped injury by some very fast footwork. Several of the truck company's employees were not so lucky and fell about 40 feet into the creek with the ruins, with some of them being seriously hurt. We built a temporary bridge in a few days and restored traffic on the highway.

EQUIPMENT FOR PICKING UP CENTER LINE MARKERS

L.D. Cabaniss, District Engineer
District 1

The business of retrieving center line markers has always been a risky one and we feel that use of equipment developed recently in the District 1 Shop has greatly reduced the safety hazard incurred in the operation. This conveyor belt eliminates the use of personnel on exposed seats hung from trucks, and allows traffic to pass to the right of the equipment traveling down the middle of the pavement. In addition, the equipment replaces a man usually used to pick up tetrahedrons.

In general, the equipment consists of a traveling conveyor belt to which flights are attached. The belt operates between an upper drum and a pickup drum attached to a frame made from six-inch channels. The pickup drum rotates independently about the axle. Power is taken from the axle and through a series of sprockets and chains. The revolutions of the drum are increased about two and one-half times. Sweeps direct the tetrahedrons into position, flights slap them into the hood covering the pickup drum, push them onto conveyor belt, and into the truck bed.

The equipment was first operated on the job on July 26, 1955. It picked up tetrahedrons spaced approximately 200 feet apart over seven miles of pavement and the only tetrahedron missed was outside the sweeps.

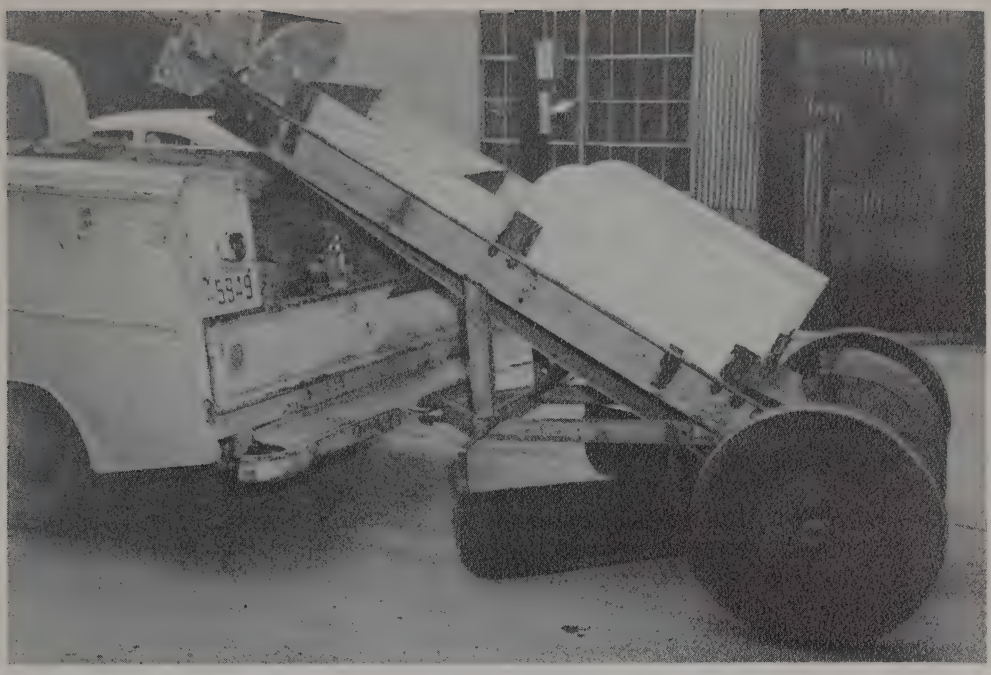
The following modifications are planned: 1) Install rollers at the top of the six-inch channels to carry the belt; 2) Install a slide beneath the six-inch channels to keep the belt from flapping when operating; 3) Increase the size of the upper drum to the same size as the pickup drum; and 4) Make height of sweeps adjustable to compensate for the variation in hitching.

The cost of building this equipment, using as much salvaged material as possible, was slightly over $400. It is our thought that the cost could be reduced to around $200.

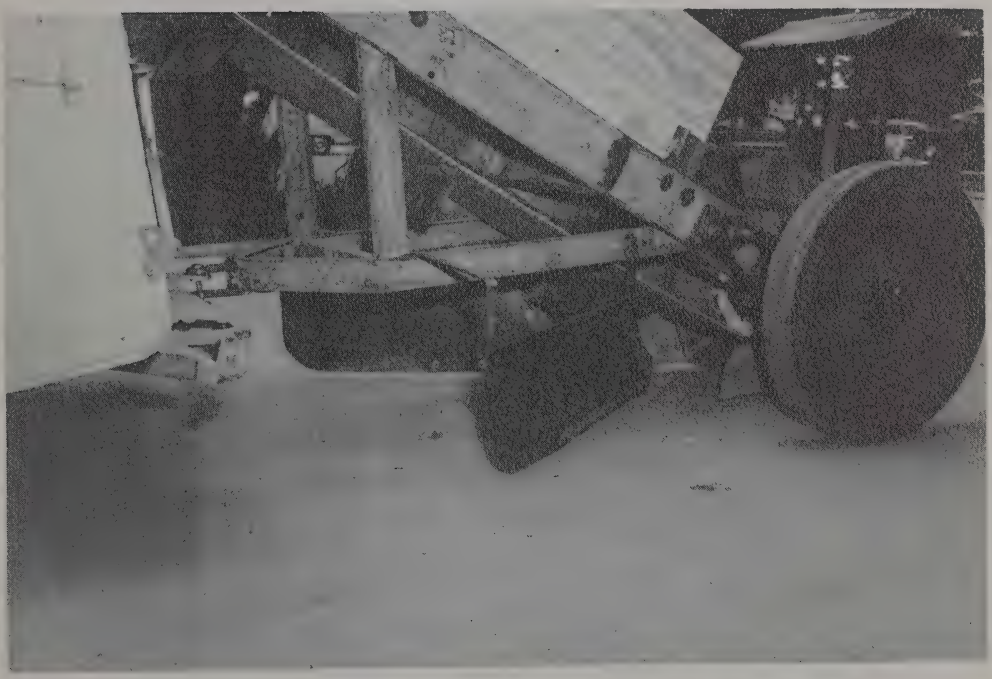
The equipment was developed in the shop of District 1 by E.J. Owen, Senior Shop Foreman, and Lyndol Redus, Skilled Laborer. It is hoped that this data will be of some benefit to other districts in the Department.

Tetrahedrons used for marking center stripe, scattered on pavement to demonstrate limits of dispersion under which pickup equipment will operate.

Near the end of trial run—100 per cent picked up.



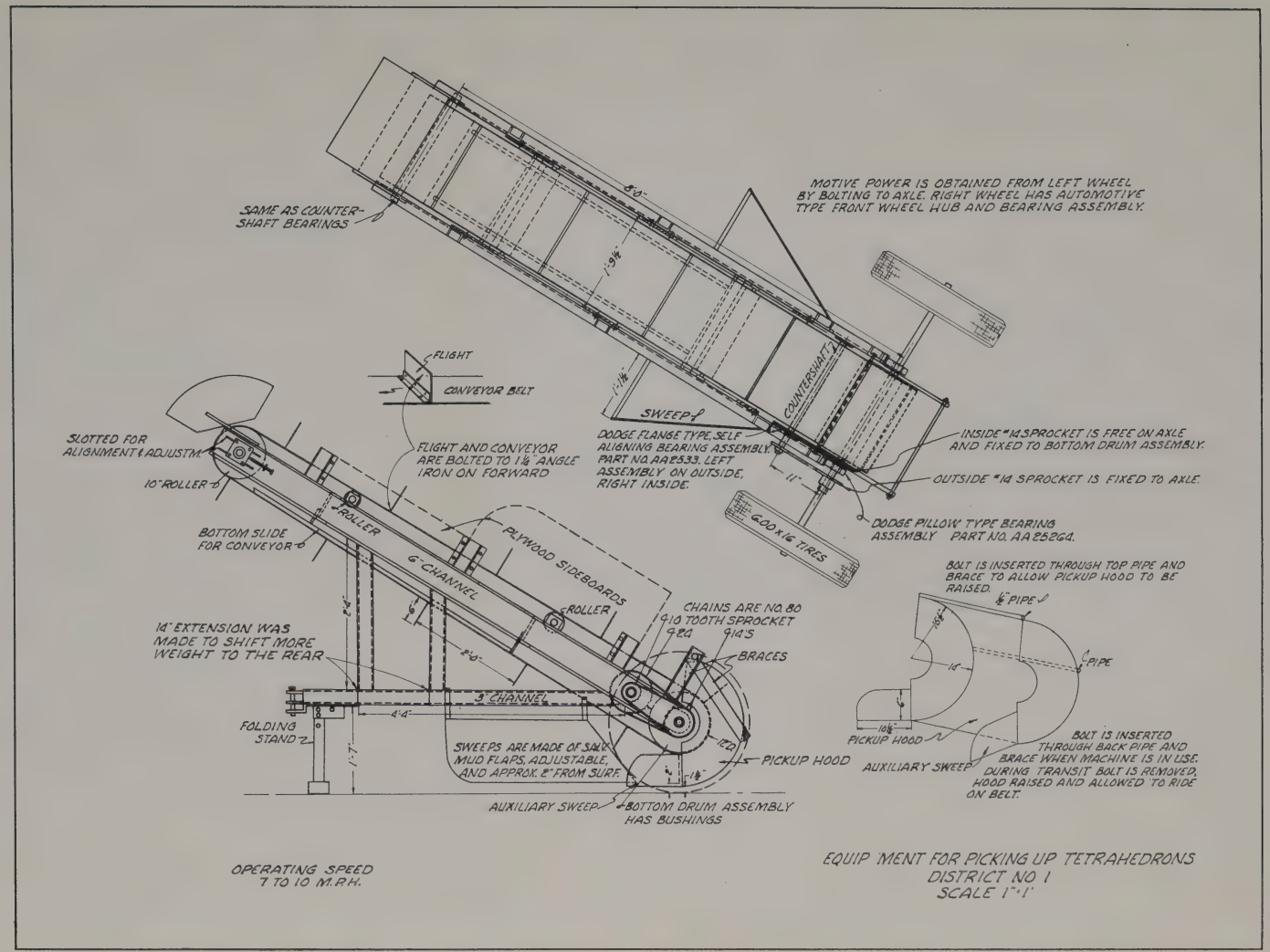
Side view showing tetrahedron pickup equipment behind pickup truck. Note plywood side boards that keep tetrahedrons from jumping over side.



View showing sweeps which direct tetrahedrons into position to be slapped by flights. Note auxiliary sweeps, rubber flights attached to conveyor belt, chain drive from rear axle to countershaft sprocket, and position of countershaft bearings.

View from rear showing pickup hood raised. Note chain and sprocket arrangement, pickup drum, conveyor belt and flight, and auxiliary sweep on hood.

Rear view showing pickup hood in operating position.


SAME AS COUNTER-SHAFT BEARINGS
MOTIVE POWER IS OBTAINED FROM LEFT WHEEL BY BOLTING TO AXLE. RIGHT WHEEL HAS AUTOMOTIVE TYPE FRONT WHEEL HUB AND BEARING ASSEMBLY.
FLIGHT
CONVEYOR BELT
SLOTTED FOR ALIGNMENT & ADJUSTM
10" ROLLER
FLIGHT AND CONVEYOR ARE BOLTED TO 1½" ANGLE IRON ON FORWARD
SWEEP
COUNTERSHAFT
DODGE FLANGE TYPE, SELF ALIGNING BEARING ASSEMBLY PART NO. AA2533. LEFT ASSEMBLY ON OUTSIDE, RIGHT INSIDE.
INSIDE #14 SPROCKET IS FREE ON AXLE AND FIXED TO BOTTOM DRUM ASSEMBLY.
OUTSIDE #14 SPROCKET IS FIXED TO AXLE.
DODGE PILLOW TYPE BEARING ASSEMBLY PART NO. AA252G4.
6.00 X 16 TIRES
BOTTOM SLIDE FOR CONVEYOR
ROLLER
PLYWOOD SIDEBOARDS
6" CHANNEL
ROLLER
CHAINS ARE NO. 80
9-10 TOOTH SPROCKET
9-24
9-14'S
BRACES
14" EXTENSION WAS MADE TO SHIFT MORE WEIGHT TO THE REAR
3" CHANNEL
FOLDING STAND
SWEEPS ARE MADE OF SAW MUD FLAPS, ADJUSTABLE, AND APPROX. 2" FROM SURF.
PICKUP HOOD
AUXILIARY SWEEP
BOTTOM DRUM ASSEMBLY HAS BUSHINGS
BOLT IS INSERTED THROUGH TOP PIPE AND BRACE TO ALLOW PICKUP HOOD TO BE RAISED.
½" PIPE
PIPE
PICKUP HOOD
AUXILIARY SWEEP
BOLT IS INSERTED THROUGH BACK PIPE AND BRACE WHEN MACHINE IS IN USE. DURING TRANSIT BOLT IS REMOVED, HOOD RAISED AND ALLOWED TO RIDE ON BELT.
OPERATING SPEED 7 TO 10 M.P.H.
EQUIP MENT FOR PICKING UP TETRAHEDRONS
DISTRICT NO 1
SCALE 1" = 1'

ALL IN A DAY'S WORK

Billy S. Reynolds, Junior Draftsman
District 17

Wondering where you might go to get that buck this season? A certain Junior Inspector in District 17 will tell you Walker County. "Why," you ask? Read on.

Before this story is related, let us get the scene. The place is a relocation of the Possum Walk Road, designated to be a farm-to-market road. This road connects F. M. 1374 and F. M. 2160, and a large portion of this road runs adjacent to the Sam Houston National Forest. The time is morning, directly after Resident Engineer Jerry Nemec had sent a party of five out to stake the center line and R. O. W. of the proposed F. M. highway.

The main character in this incident is John O'Banion, Junior Inspector, and instrumentman at this particular time. The remainder of the party were performing their duties of chaining, staking, and cutting brush farther down the center line.

John's attention was first attracted by the tinkle of a bell such as those worn by small animals. This particular bell was around the neck of an eight-point buck. The first sight of the deer brought a shocked disbelief of what he was seeing, but after the initial shock passed, John called to the other members of the party, "Hey, look here. It's an eight-point buck." The party stopped momentarily, shook their heads, and then went on about their work, grumbling to themselves something about "crazy."

In the meantime the buck decided to come up closer and be sociable—his first action like that of a pet lightly rubbing against a friend. He finally carried his friendship overture to the point that it was impossible for John to efficiently operate as an instrumentman since the deer was coming dangerously close to knocking the

instrument over. Whether it was John's desire to protect the instrument for the instrument's sake, for John's sake, or because he knew a lot of work would have to be done over if the instrument was disturbed is his secret, anyway, he tried to drive the small deer away, but the deer had decided he did not wish to depart company so soon.

Sizing things up, John himself weighing around 220 pounds and the deer scarcely weighing 100 pounds, he decided to manually move him away. This worked fine as far as moving the deer away went, but keeping him away was a different story. Immediately after John turned the deer loose, it came charging back, this time in an entirely different mood than previously. Seeing that the buck was angered and possibly ready to duel, John grabbed him by the antlers and held him back, at the same time calling to the others for help.

About the time the party arrived on the scene John manually hurled the animal some 20 feet clear of where he was standing. Immediately upon hitting the ground the buck was back on his feet and came charging back, this time he was back so fast that John could not evade his attack. The deer, with his head lowered hit furiously, knocked John to the ground, still holding on to the deer's antlers. The party, at first amused by the matador and the deer, soon realized the seriousness of the situation and came to the rescue.

Our hero came out with a puncture wound below the left knee, which caused him to miss a few days work. Other than that it is just an amusing story around District 17, especially this time of the year.

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Capsule Statistics for Busy Executives . . .

Texas rivers, like many of its other brags, may be a "mile wide and an inch deep," but podner, they've sure got plenty of mileage. The Rio Grande River winds for 900 miles along our Southern border; the Brazos is next with 840 miles; the Colorado meanders along for 600 miles pausing to fill up the five beautiful Highland Lakes as it travels to the Gulf at Matagorda; the Trinity and Red Rivers each travel 450 miles in Texas; the Sabine runs for 360 miles; the two confusing ones, the Nueces and the Neches run for 315 and 260 respectively; while the Pecos, which is called a river only by stretching a point, dawdles along for 260 miles through the heart of arid West Texas.

In addition to these rivers, there are 525 lakes and reservoirs and many other smaller streams, "cricks," and ponds, not to mention the innumerable bays, inlets, bayous, resacas, and lagoons along the Texas coast.

Rural Mail Box Supports

J.M. Zeigler, Skilled Laborer
District 2

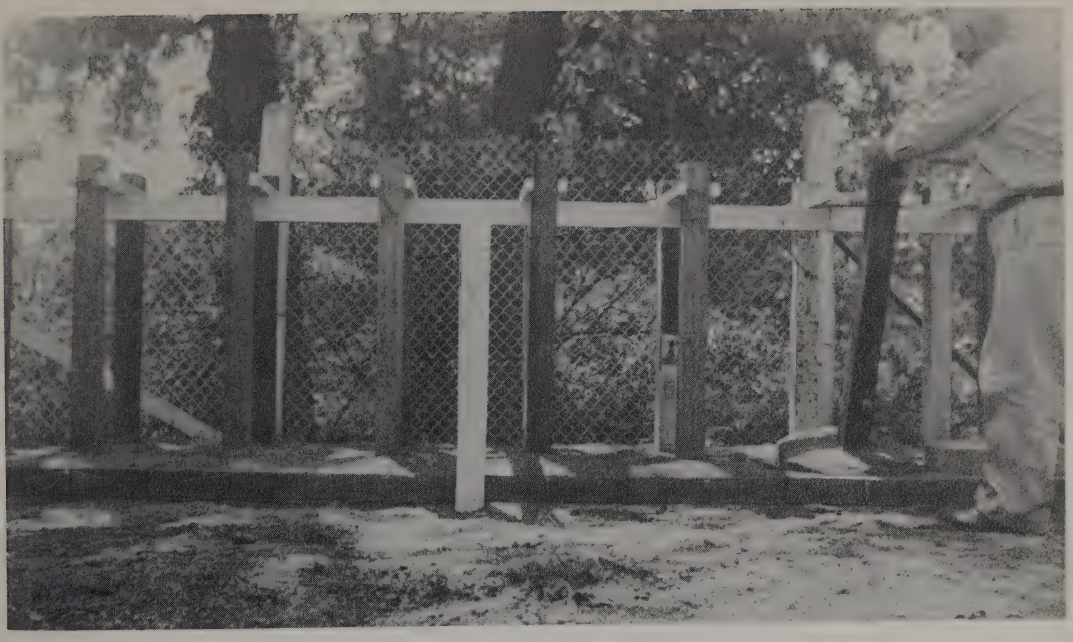
Because of the constant demand for rural mail box supports we decided that we could improve our methods of building them. New farm-to-market roads and destruction of existing supports seem to prevent us from keeping a sufficient number of the supports in stock.

We had been pouring only ten concrete bases for the supports at one time, but we decided that with very little effort we could pour an additional ten if we had the facilities. The facilities we needed included a place where we could cure more bases. To meet this need we picked out a location in the warehouse lot which stays shady most of the day. Two men spent one-half day constructing a level concrete slab on which to cure the bases, and another half day was spent building the framework for holding the posts in a plumb position while the concrete bases were being poured. The cost of materials was negligible as the framework consists largely of salvaged lumber.

The framework has been constructed so that there are no obstructions to prevent finishing of the concrete while the post is being held in its vertical position. Another feature that we like is the simplicity in plumbing the posts and holding them securely in place.

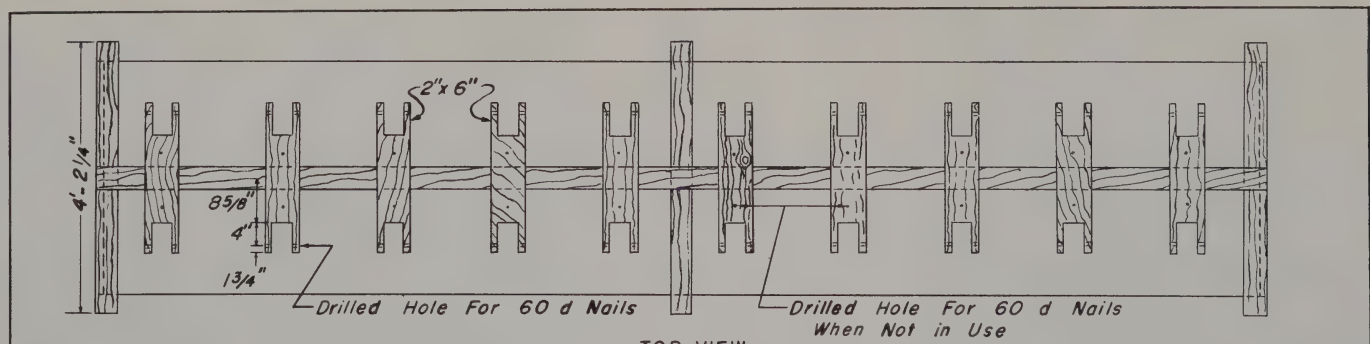
We believe that we have built a timesaver and also have improved the quality of our mail box supports.

Process of curing.

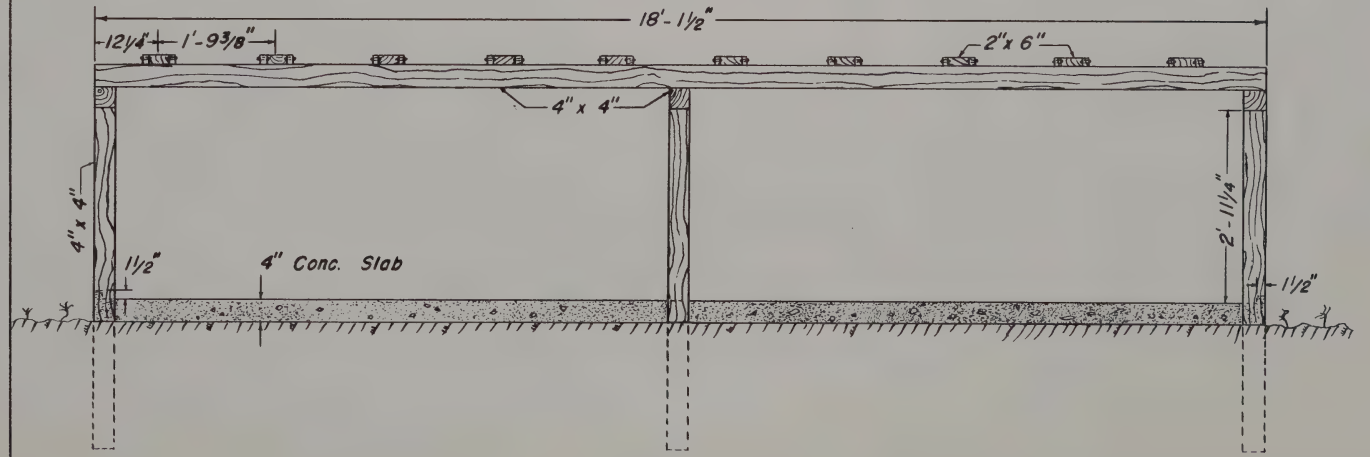


Removing post from plumbed position.

Removed base and post.



TOP VIEW



FRONT VIEW

SCALE 1" = 2'

CONCRETE SLAB AND FRAME WORK
FOR
CONSTRUCTING MAIL BOX SUPPORTS

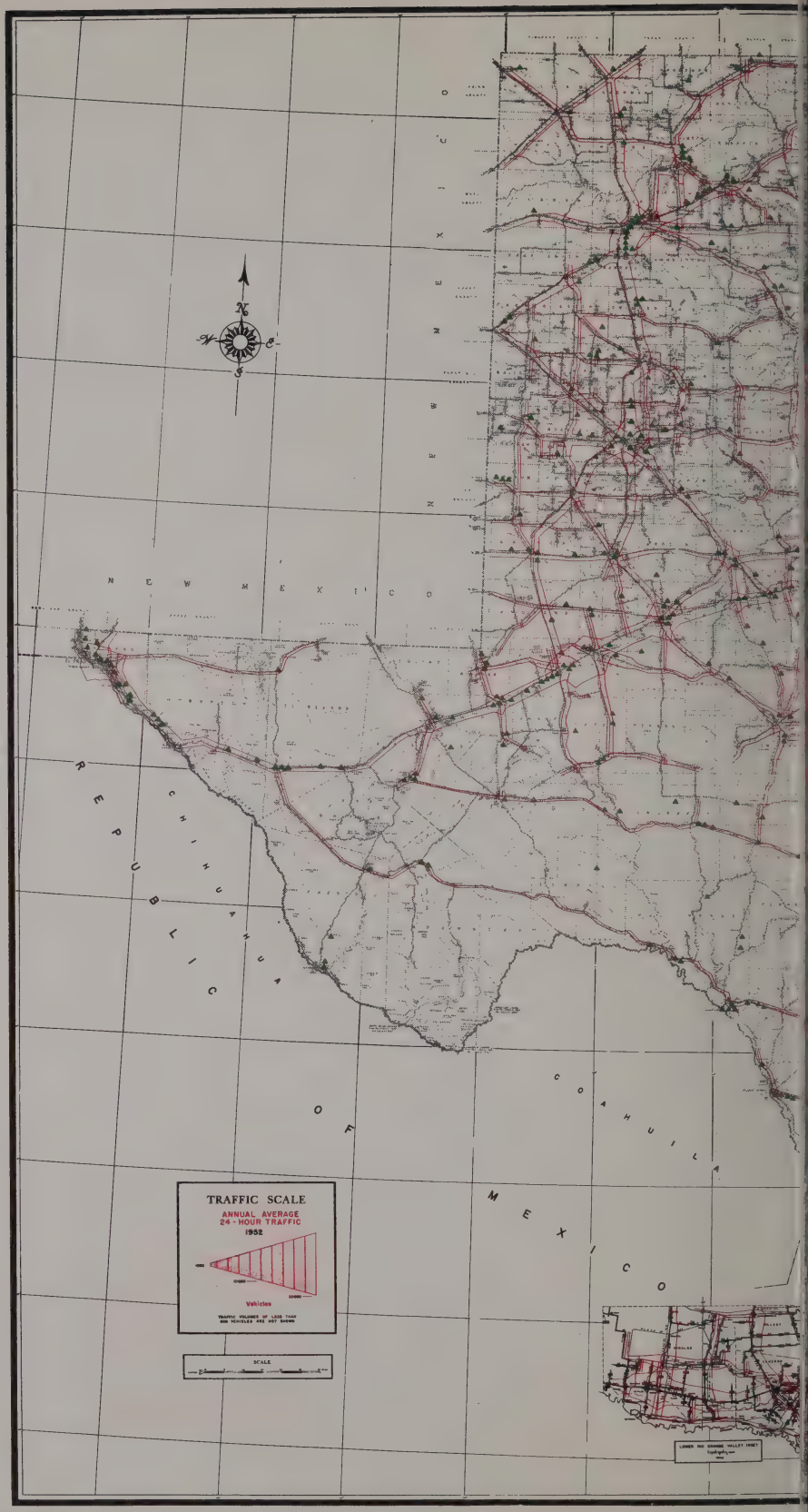
first aid training

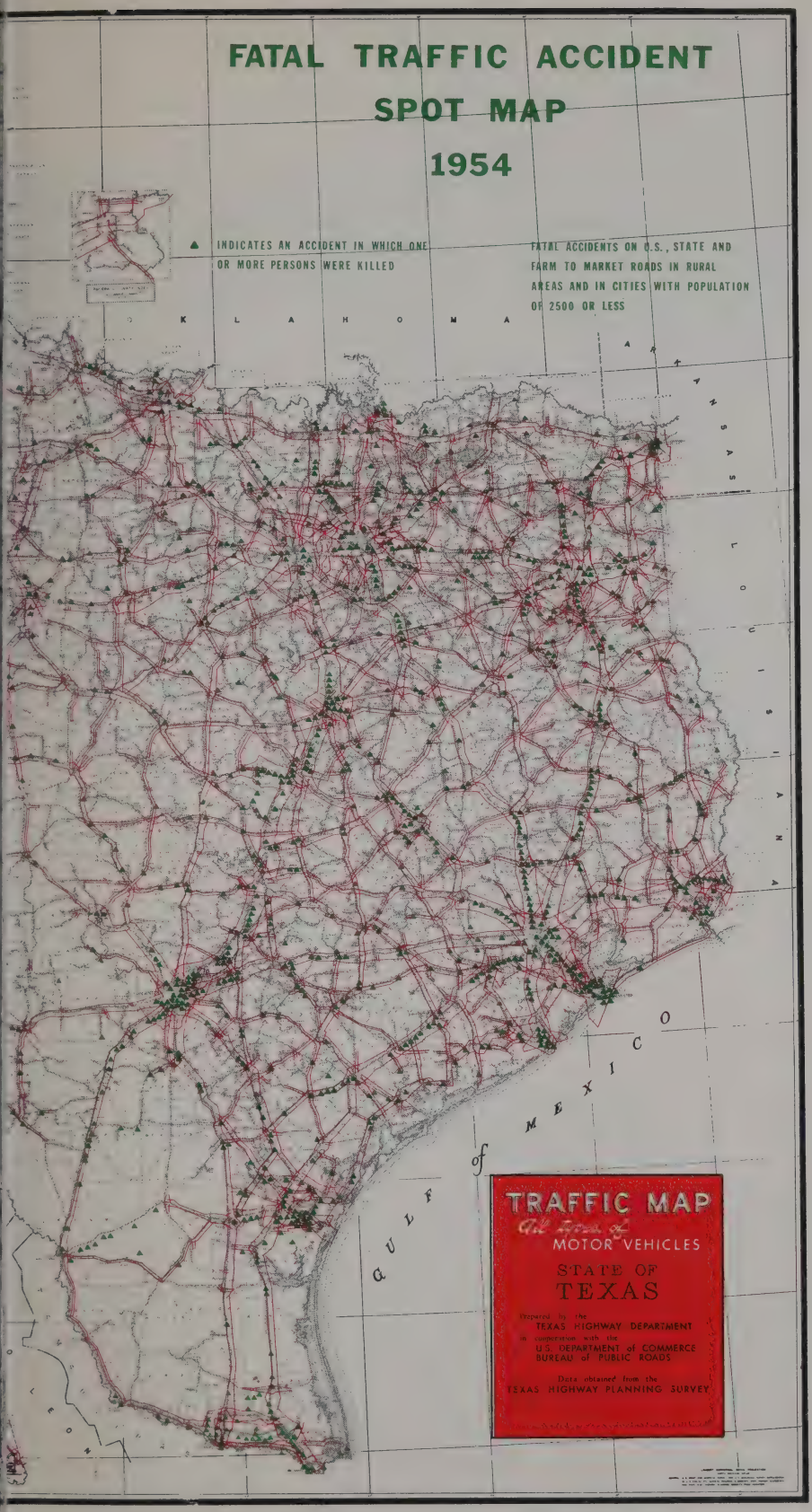
Alton Vordenbaum, Senior Maintenance Superintendent
District 15

If everyone knew of the great value of first aid training, the American Red Cross probably would find it difficult to provide instruction for all the applicants. However, a large percentage of people do not realize its great worth. Unfortunately, it is like some other things such as insurance or fire extinguishers which are of little value until they are needed for an emergency, at which time they are needed immediately. Once the emergency has occurred, there is no time for training. Without this preparation for sudden illness or accident, unnecessary suffering or even death may occur which could have been prevented.

In the Highway Department, first aid training has taught us how to prevent many accidents, as well as to use the knowledge when necessary. Many employees have taught their families what they learned in these courses. The Department should be commended for adopting this valuable program which has served so well. It is a real privilege for the employees to participate in this important training. Although it would be difficult to estimate its value in dollars and cents to the Department, it is generally realized that the results have been gratifying. Big industry statistics show that employees trained in first aid have 50 per cent less accidents.

H. F. Hilgers, Senior Designing Engineer with the Department at San Antonio, recently found out with shocking suddenness how much first aid meant to him. He and his family were at a ranch near Bandera when his nineteen year old son was bitten by a copperhead snake. Hilgers had a snake-bite kit with him and immediately applied first aid while the son was being taken to the doctor at Bandera. A minimum of hospitalization was required and the attending doctor stated this was largely due to the first aid given within the first few minutes after the bite. We are certainly glad Hilgers was prepared. This could happen to anyone. It is urgent for every family to avail itself of this opportunity to be prepared for sudden illness or accident, or even disaster.


N E W M E X I C O
N E W M E X I C O
CHIHUAHUA
REPUBLIC
OF
COAHUILA
MEXICO
TRAFFIC SCALE
ANNUAL AVERAGE
24-HOUR TRAFFIC
1952
Vehicles
SCALE


FATAL TRAFFIC ACCIDENT
SPOT MAP
1954
▲ INDICATES AN ACCIDENT IN WHICH ONE OR MORE PERSONS WERE KILLED
FATAL ACCIDENTS ON U.S., STATE AND FARM TO MARKET ROADS IN RURAL AREAS AND IN CITIES WITH POPULATION OF 2500 OR LESS
O K L A H O M A
A R K A N S A S
L O U I S I A N A
M E X I C O
G U L F of
TRAFFIC MAP
All Types of
MOTOR VEHICLES
STATE OF
TEXAS
Prepared by the
TEXAS HIGHWAY DEPARTMENT
in cooperation with the
U.S. DEPARTMENT of COMMERCE
BUREAU of PUBLIC ROADS
Data obtained from the
TEXAS HIGHWAY PLANNING SURVEY

F.M. Davis heads the San Antonio organization.

Feldon P. Heickman and Ruth Boyd, Distri
Amos Hilburn, Accountant, go over equ

THE DISTRICTS PASS IN

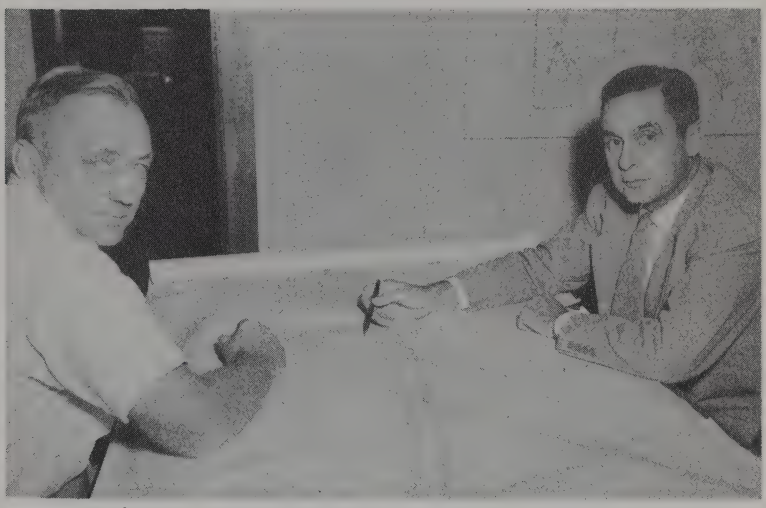
Everybody, but everybody, knows where San Antonio is. It is Texas' most historically interesting, most cosmopolitan, most beautiful, most everything--or so the natives will tell you. Founded in 1712 by Spanish padres at an Indian village location, the ancient town has been under Spanish royal dominion, and Mexican, Texas Republic, Confederate States, and the United States flags have all flown over her weathered 'dobe buildings.

Today in addition to being a tourist mecca second to none—thanks to the current Davy Crockett craze—"San Antone" is a busy modern city with some of the country's biggest military installations. It also serves as headquarters for the Highway Department's District 15--center of a twelve-county area.

This District runs the gamut from East to West Texas, beginning as

Marie H. Michel, Junior Laboratory Assistant, weighs soil samples.

Office Clerks, and
nent rentals.

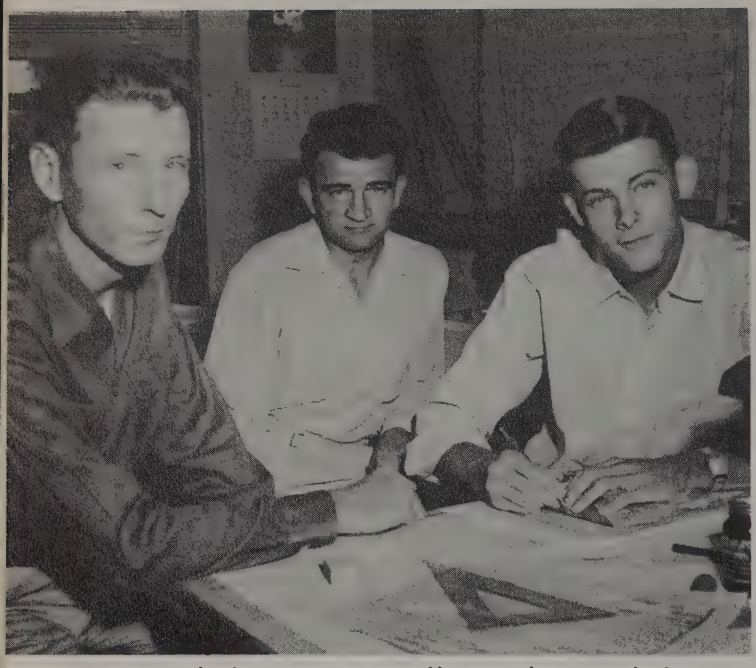


H.F. Hilgers, Senior Designing Engineer, and B.L. DeBerry, Assistant District Engineer, go over an interchange layout in New Braunfels.

REVIEW DISTRICT 15

it does in the coastal and Rio Grande plains area, straddling the Balcones Escarpment and the Hill Country, and climbing to the Edwards Plateau on its western edge. It has a little of the Blackland Prairies and Post Oak Belt thrown in for good measure. Tucked away in the hills are communities founded by early German immigrants that add to the flavor of this section which has long been one of the state's favorite vacation spots.

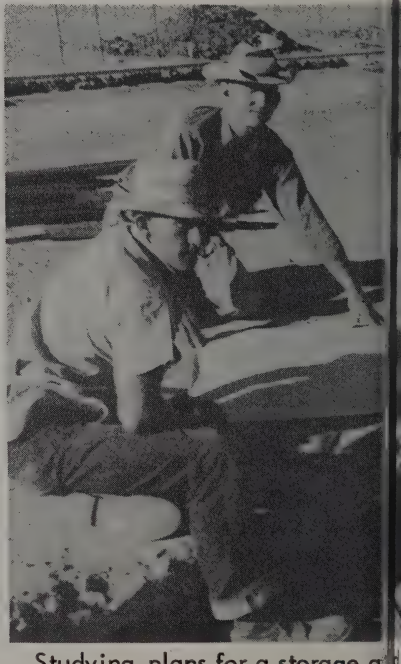
Created in 1923-24, District 15 today has 2,166 miles of highways under its jurisdiction, ranging from the ultramodern San Antonio Expressway on U.S. 81 to the all-weather farm-to-market roads that wind through its beautiful Hill Country. About 600 employees work in the offices and on the highways in the twelve counties, keeping the District's system of roads in first-class condition.



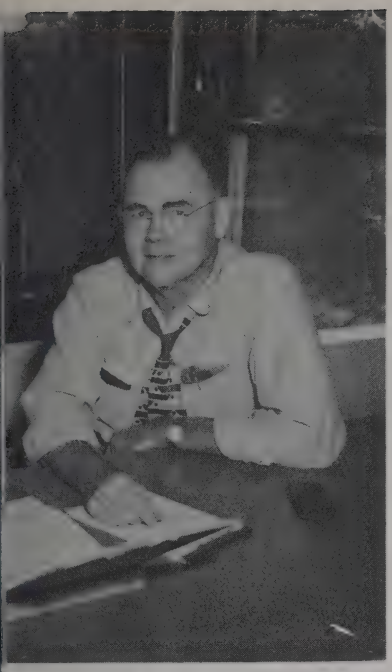
Aerial photo maps are all in a day's work for Roland Klar, Junior Draftsman, and Harry Collins and Jerry R. Killian, Rodmen.

Miss Luise Groszeit, Junior Dra
Resident Engineer, go over an e
Miss Groszeit, formerly of Ge
citizen the day this picture wa

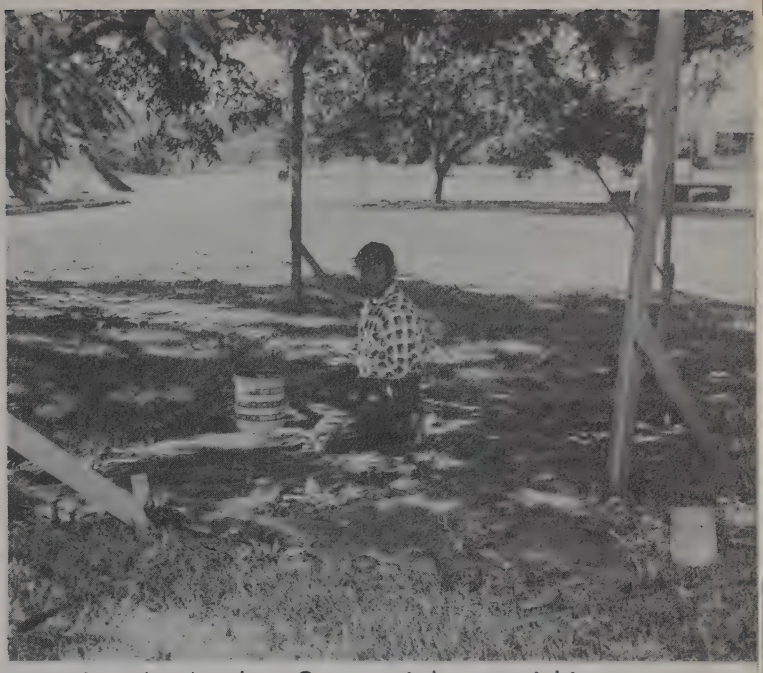
Working on an expressway interchange are Arthur Trevino, Senior Draftsman, and June Vukasin, Junior Draftsman.



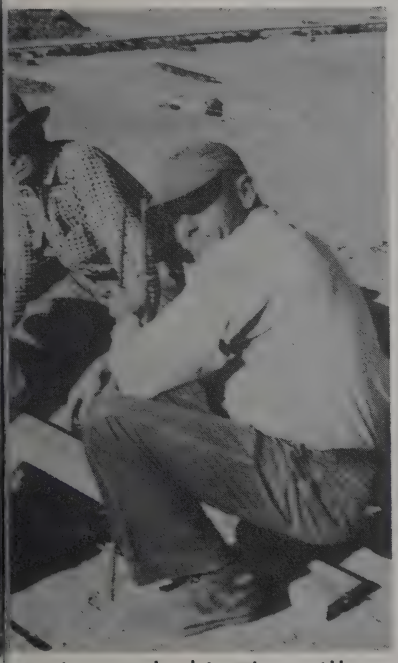
Studying plans for a storage a
on State 97 are Calvin Faull
Lohse, Skilled Laborer, B.R. V
man, and Joe Klasek, Comma



sman, and Robert D. Deegan, ɔressway illumination project. nany, became a United States nade.

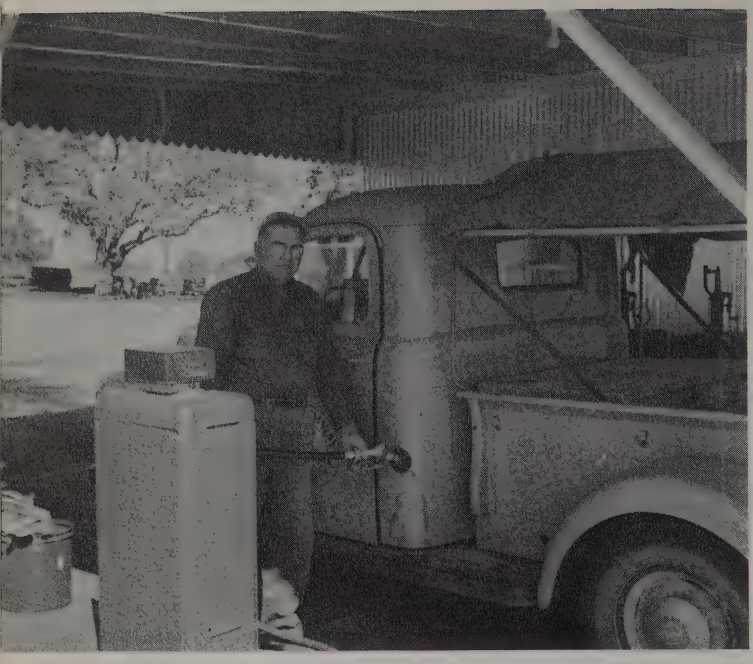


Jose A. Arocha, Common Laborer, picking up pecans under one of the huge old trees on the District office grounds.



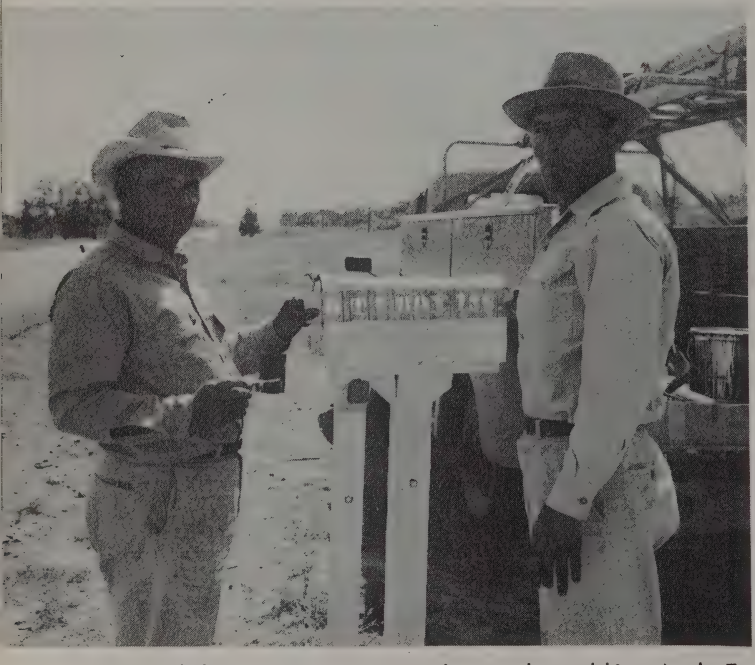
equipment shed in Floresville er, Common Laborer, Alfred od, Senior Maintenance Fore- Laborer.

Paul J. Mazac and Emil C. Baumann, Semi-skilled Laborers, operate a pneumatic tamper at the new maintenance warehouse in Floresville.



"Fill 'er up!" Elmo S. Wheeler, utility man and Permit Clerk in Pleasanton, hears that often.

Pecans from the district tree money used for the office flowe Senior Office Assistant, and M track of the money.



Part of the Department's service to the public—Andy F. Riley, Semi-skilled Laborer, and Andris Martinez, Common Laborer, stenciling mail box.

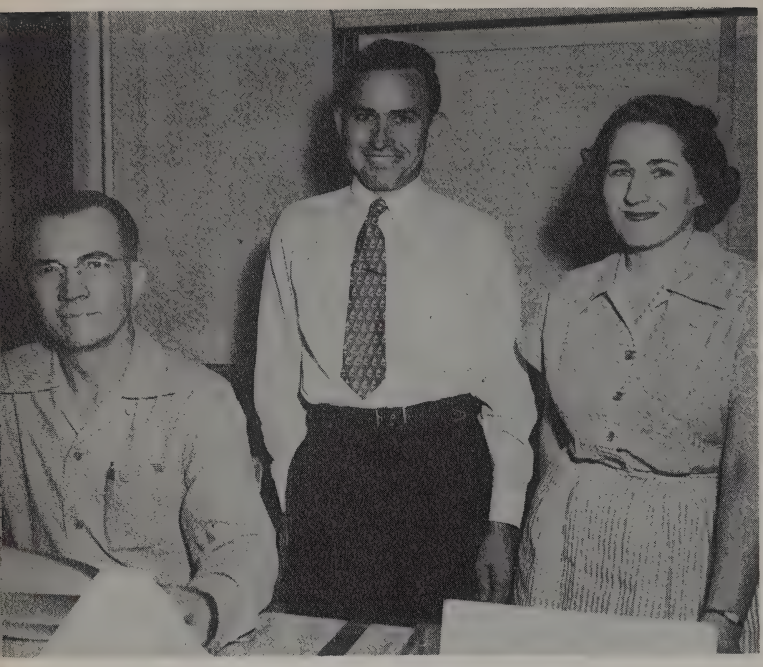
Tom Walthall, Resident Engi Magers, Senior Engineering A Antonio urban expressway pr

are sold to employees and the
nd gift fund. Ruth Thompson,
kine Horn, Junior Clerk, keep

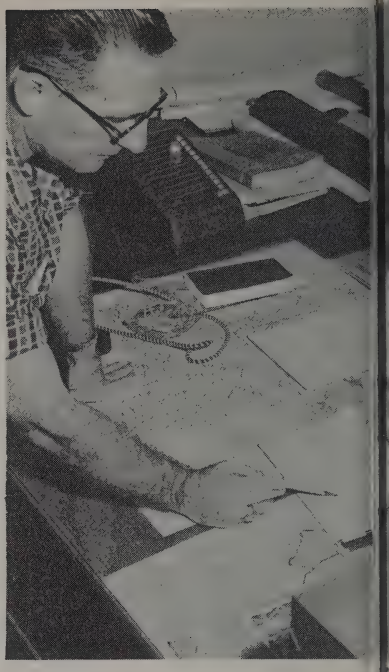
Repairing center stripe machine are Robert H. Mair, Skilled Laborer, and Mobert A. Weller, Luis B. Gomez, Pedro Seguin, and Lorenzo Guzman, Semi-skilled Laborers.

eer, Adolf Machotka, and R.H.
ssistants, work on layout of San
ect.

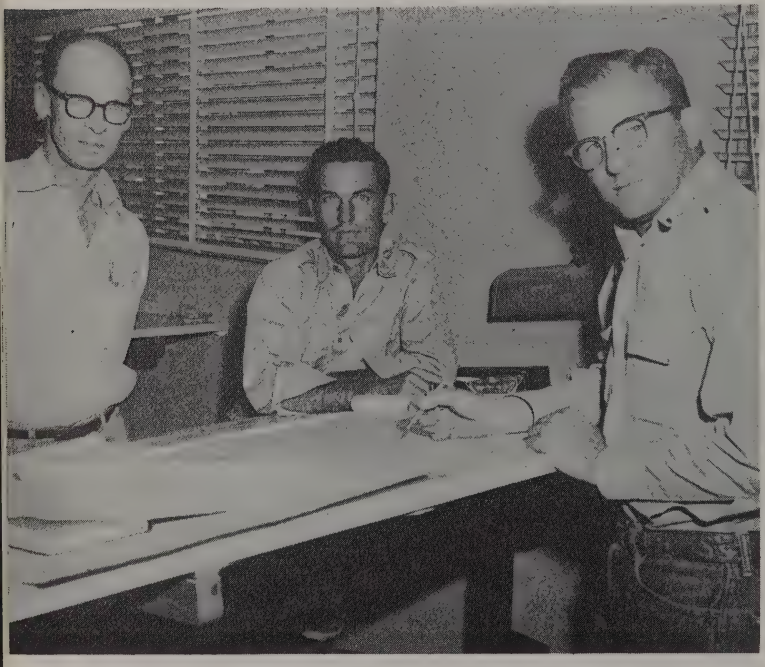
Hermann H. Seele, Senior Designing Engineer, goes over the Official Highway Travel Map for any changes in District 15 for the 1956 edition.



More accounting work being done by Mrs. L.N.Copeland District Office Clerk, D.W. Burns, Senior Accountant, and Ralph McLelland, Chief District Accountant.

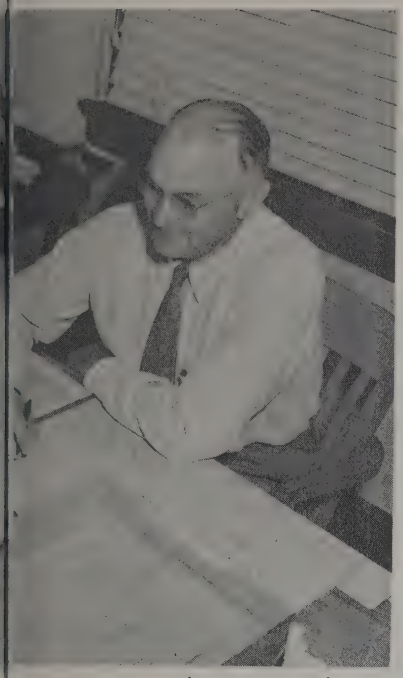


Carl F. Braunig, Associate Tr
District Maintenance Enginee
width for a driveway installe



Edwin W. Bull, Senior Party Chief, Jimmie Clyburn, Rodman, and John A. Crain, Junior Office Assistant, working on a proposed grade line on F.M. 1784 near Pleasanton.

Discussing time tickets ar
District Office Clerks.



c Engineer, and R.H. Zeigler, discussing recommended paving n.

Time out for lunch under one of the big pecans—J.L. Schrenk, Semi-skilled Laborer, and Lloyd Mair, Skilled Laborer, enjoy San Antonio's warm winter climate.

orothy Williams and Ruth Zerm,

Alton Vordenbaum, Senior Maintenance Superintendent, is District 15 reporter for TEXAS HIGHWAYS.

What's New

A ceremony officially opening a new structure and a second ceremony marking the beginning of construction of another were all in a day's business for members of the State Highway Commission one day in October.

At noon on October 3 the Commissioners met in DelRio where Chairman E. H. Thornton Jr. made the principal address at the dedication of the overpass which carries U. S. 277 and 377 over the Southern Pacific Railroad. About eight years of planning and negotiation by the city, railroad, and Highway Department were culminated with the awarding of the contract for this grade separation last December for $240, 000.

Following the dedication, the Commission members and a caravan of interested citizens of that area traveled about 44 miles up U. S. 90 to the Pecos River and the site of the high bridge to be constructed. Thornton turned the first shovelful of dirt to officially start construction of the million-dollar structure which will replace the old bridge that was knocked out in the 1954 flood. The new structure will cross the Pecos Canyon from rim to rim, about 275 feet above the stream bed.

About 300 people attended the barbecue and dedication ceremony opening Del Rio's new Southern Pacific Railroad overpass to traffic.

Highway Commission Chairman E.H. Thornton Jr. prepares to turn the first shovelful of dirt at a brief ceremony observing the beginning of construction of the new Pecos River high crossing.

motor vehicle registrations

Texas motor vehicle registrations, including only automobiles, trucks, and buses, are expected to show a 7.1 per cent increase in 1955 making it the third in the nation, outnumbered only by California and New York. For the last few years we have ranked fourth in the number of licenses issued, just behind Pennsylvania. But Texas' 1955 registrations are expected to put her ahead; the forecast for Pennsylvania is a 1.4 per cent increase over last year. Florida leads in expected increase with 10 per cent, followed by Texas. Increases of between 6 and 7 per cent are expected in Alabama, California, Georgia, Louisiana, and North Carolina. These estimates, prepared by the Bureau of Public Roads, do not include such vehicles as motorcycles and trailers and cover the calendar year rather than registration year. The estimates are based on reports of registrations in the early months of the year and on information available on current trends.

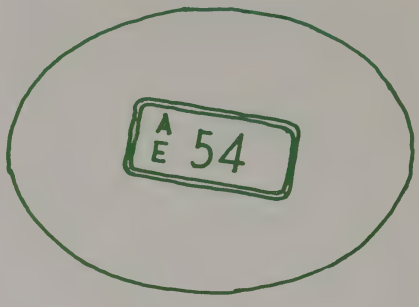
August 1955

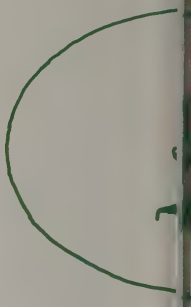
STATE	AUTOMOBILES			TRUCKS AND BUSES			TOTAL MOTOR VEHICLES		
	REGISTERED 1954	ESTIMATED 1955	PERCENT CHANGE 1955/1954	REGISTERED 1954	ESTIMATED 1955	PERCENT CHANGE 1955/1954	REGISTERED 1954	ESTIMATED 1955	PERCENT CHANGE 1955/1954
Alabama	720,848	778,000	7.9	194,550	198,000	1.8	915,398	976,000	6.6
Arizona	290,853	308,000	5.9	88,851	92,000	3.5	379,704	400,000	5.3
Arkansas	367,045	385,000	4.9	177,974	182,000	2.3	545,019	567,000	4.0
California	4,879,210	5,225,000	7.1	819,632	829,000	1.1	5,698,842	6,054,000	6.2
Colorado	523,651	550,000	5.0	158,674	164,000	3.4	682,325	714,000	4.6
Connecticut	762,195	799,000	4.8	105,061	109,000	3.7	867,256	908,000	4.7
Delaware	110,893	114,000	2.8	28,833	30,000	4.0	139,726	144,000	3.1
Florida	1,184,224	1,310,000	10.6	223,473	238,000	6.5	1,407,697	1,548,000	10.0
Georgia	894,392	960,000	7.3	239,136	245,000	2.5	1,133,528	1,205,000	6.3
Idaho	225,466	232,000	2.9	89,357	93,000	4.1	314,823	325,000	3.2
Illinois	2,693,638	2,820,000	4.7	394,154	406,000	3.0	3,087,792	3,226,000	4.5
Indiana	1,391,194	1,460,000	4.9	291,236	298,000	2.3	1,682,430	1,758,000	4.5
Iowa	926,326	956,000	3.2	217,214	223,000	2.7	1,143,540	1,179,000	3.1
Kansas	759,088	791,000	4.2	242,514	252,000	3.9	1,001,602	1,043,000	4.1
Kentucky	751,500	800,000	6.5	206,096	212,000	2.9	957,596	1,012,000	5.7
Louisiana	684,653	732,000	6.9	189,147	197,000	4.2	873,800	929,000	6.3
Maine	237,905	250,000	5.1	68,097	69,000	1.3	306,002	319,000	4.2
Maryland	741,442	769,000	3.7	129,563	137,000	5.7	871,005	906,000	4.0
Massachusetts	1,294,211	1,352,000	4.5	185,678	187,000	0.7	1,479,889	1,539,000	4.0
Michigan	2,485,369	2,585,000	4.0	362,376	370,000	2.1	2,847,745	2,955,000	3.8
Minnesota	1,068,233	1,106,000	3.5	238,258	247,000	3.7	1,306,491	1,353,000	3.6
Mississippi	403,440	431,000	6.8	181,090	186,000	2.7	584,530	617,000	5.6
Missouri	1,139,714	1,183,000	3.8	294,164	300,000	2.0	1,433,878	1,483,000	3.4
Montana	213,694	220,000	3.0	100,635	104,000	3.3	314,329	324,000	3.1
Nebraska	485,548	493,000	1.5	151,442	155,000	2.4	636,990	648,000	1.7
Nevada	87,436	93,000	6.4	27,746	29,000	4.5	115,182	122,000	5.9
New Hampshire	163,674	171,000	4.5	38,293	39,000	1.8	201,967	210,000	4.0
New Jersey	1,683,684	1,759,000	4.5	244,393	247,000	1.1	1,928,077	2,006,000	4.0
New Mexico	227,036	239,000	5.3	82,481	86,000	4.3	309,517	325,000	5.0
New York	3,893,980	4,081,000	4.8	498,395	505,000	1.2	4,392,875	4,586,000	4.4
North Carolina	1,031,663	1,098,000	6.4	272,589	287,000	5.3	1,304,252	1,385,000	6.2
North Dakota	203,253	206,000	1.4	96,432	99,000	2.7	299,685	305,000	1.8
Ohio	2,891,344	3,021,000	4.5	409,142	423,000	3.4	3,300,486	3,444,000	4.3
Oklahoma	709,602	746,000	5.1	253,821	263,000	3.6	963,423	1,009,000	4.7
Oregon	683,431	710,000	3.9	81,418	84,000	3.2	764,849	794,000	3.8
Pennsylvania	3,021,581	3,088,000	2.2	2/ 509,543	515,000	1.1	3,553,981	3,603,000	1.4
Rhode Island	257,508	269,000	4.5	36,564	38,000	3.9	294,072	307,000	4.4
South Carolina	580,935	610,000	5.0	138,771	142,000	2.3	719,706	752,000	4.5
South Dakota	229,370	237,000	3.3	85,266	87,000	2.0	314,636	324,000	3.0
Tennessee	890,443	943,000	5.9	227,742	237,000	4.1	1,118,185	1,180,000	5.5
Texas	2,746,780	2,966,000	8.0	759,819	789,000	3.8	3,506,599	3,755,000	7.1
Utah	244,170	257,000	5.3	62,476	65,000	4.0	306,646	322,000	5.0
Vermont	115,840	119,000	2.7	15,447	16,000	3.6	131,287	135,000	2.8
Virginia	941,008	995,000	5.7	212,105	220,000	3.7	1,153,113	1,215,000	5.4
Washington	881,395	910,000	3.2	203,763	210,000	3.1	1,085,158	1,120,000	3.2
West Virginia	396,101	401,000	1.2	117,308	117,000	-0.3	513,409	518,000	0.9
Wisconsin	1,095,060	1,128,000	3.0	241,711	248,000	2.6	1,336,771	1,376,000	2.9
Wyoming	115,716	120,000	3.7	52,771	55,000	4.2	168,487	175,000	3.9
Dist. of Col.	173,128	178,000	2.8	22,435	23,000	2.5	195,563	201,000	2.8
TOTAL	48,498,870	50,954,000	5.1	10,068,136	10,347,000	2.8	58,589,863	61,301,000	4.6

1/ These estimates were made by the Bureau of Public Roads on the basis of State reports of motor vehicle registrations in the early months of 1955, and information available on current trends, motor vehicle production, and other factors. They include both privately-owned and publicly-owned motor vehicles, except those owned by the military services. Registrations shown for 1954 are from table MV-1, 1954.

2/ Adjusted to eliminate certain nonhighway tractors.

WHERE IT





MOTOR FUEL TAX
$78 million - 41%

REGISTRATION FEES
$48 million - 25%

FEDE
$44 m

Highway

195

FISCA

CONSTRUCTION
$137 million - 71%

MAINTENANCE
$39 million - 20%

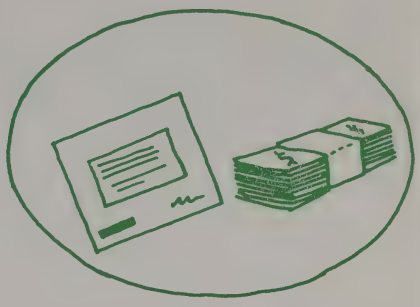
OPERATION
$7 million - 5 %

...WHERE

...OMES FROM...

AID
– 23%

STATE FUNDS (SB 287)
$15 million – 8%



MISCELLANEOUS
$2 million – 1%

55

EAR

Dollar...

STATE POLICE
$4 million – 2%

HIGHWAY ADMINISTRATION
$2 million – 1%

MISCELLANEOUS
$6 million – 3%

T GOES

Bureau of Public Roads

The Part It Plays in Texas Highway Construction

J.M. Page, District Engineer
Bureau of Public Roads

Mr. Page is District Engineer in charge of the Texas office of the Bureau of Public Roads. Prior to coming to Texas he worked for state highway departments in Maryland, Virginia, and Delaware, and was state highway engineer for the Oklahoma Highway Department for three years. He was manager of the Texas branch of Associated General Contractors in 1927 and in 1929 he returned to Public Roads. He worked in Arkansas and Louisiana before coming to Texas in 1945 in his present capacity. Page attended Baltimore Polytechnic Institute.

Some time ago, while traveling, I engaged in conversation with a gentleman who was evidently a man of rather large affairs in the State of California. It became appropriate in due time for me to tell him what I did for a living. When I said that I worked for the U. S. Bureau of Public Roads he said, "What do they do? I never heard of the organization." After I had explained briefly the scope of our functions, he said in a tone of voice bordering on incredulity, "Well, that's the first time I ever knew that the Federal Government was aiding in the construction of the California State Highway System." There are doubtless many Texans also who have never heard of the Bureau of Public Roads and there may be some even among the Highway Department personnel who recognize but dimly that the Federal Government plays a substantial part in the construction of the Texas Highway System and who would like to be informed. Therefore it may not be amiss to attempt to outline the functions of the Bureau of Public Roads and to highlight the part it is playing here in Texas.

The Bureau of Public Roads is an agency of the Federal Government under the Department of Commerce whose chief function is the administration of the Federal funds appropriated by Congress for the construction of highways and apportioned to the several states. It is a comparatively old organization, originating in 1893 as "The Office of Road Inquiry" in the Department of Agriculture. The first Federal-aid Highway Act was passed in 1916, which marked the very modest beginning of the Bureau as it exists today. At that time there were very few paved roads in the United States outside of the cities, and what few there were were pretty well torn up by the wartime military traffic of 1917-1918. Some of the old-timers can remember the army truck convoys traveling on solid rubber tires. So that actually the construction of the highway system of the United States under State Highway Department supervision dates from about 1919. While much has been accomplished in the past 36 years, highway construc-

tion has never kept pace with the production of automobiles and trucks which today number over 61 million, or about one for every three people in the country. So that today the job ahead of us seems larger than it ever has in the past.

"Public Roads," as we commonly abbreviate the full name, Bureau of Public Roads, operates through a Washington staff, headed by the Commissioner, with a Deputy Commissioner in charge of each of the major subdivisions. This same scheme of organization is reflected in each of the ten divisions into which the country is divided, each headed by a division engineer whose jurisdiction covers several states.

The division in which Texas lies also embraces Oklahoma, Arkansas, and Louisiana. J. A. Elliott is Division Engineer, with offices in Fort Worth. The same organizational scheme descends to the individual states in a somewhat modified form, with a district engineer in charge of each state office. Here in Texas in our Austin office we have a staff of engineers to handle design, construction and maintenance, programs and planning, and all types of field inspections. In addition there is a very busy bridge section under a district bridge engineer, as well as a small clerical force headed by an administrative manager — 22 individuals in all. Not a very large organization to administer a construction program which since 1945, at the end of World War II, has amounted to a total of approximately $750 million of Federal-aid projects, financed with Federal funds to the extent of approximately $375 million. At present, because of recently increased Federal appropriations, this program is going forward at the rate of well over $100 million a year, financed half State and half Federal funds. Beginning with fiscal 1957, which begins next July 1, the Federal highway funds allotted to Texas amount to $52,594,859, which will finance a construction program matched with State funds of more than $100 million.

Our part in Texas highway construction is essentially that of a partner of the Texas Highway Department in that the two organizations have a common aim—to build the Texas Highway System in accordance with sound engineering principles. However, our primary purpose and our legal responsibility is to administer the expenditure of Federal funds in accordance with the Federal Highway Act and the governing rules and regulations. To this end, field inspections are made in conjunction with the state's engineers to determine acceptable routes, locations, and details of design.

The state is divided into 25 highway department districts, each largely autonomous and in charge of a district engineer. As is well known, Texans are great individualists, and the human equation, as reflected in the ideas and convictions of the individual district engineer and his associates, frequently enters the picture, and sometimes conflicting personal opinions of the Highway Department and Public Roads engineers must be coordinated, even though design standards and engineering fundamentals are not always involved.

In planning a Federal-aid construc-

tion program the Highway Department, under the Federal legislation, has the right of initiating the projects proposed for inclusion in the program. We examine the projects proposed for construction, for compliance with Federal requirements, justification from the standpoints of benefits to the public, traffic requirements, and continuity of the system, and withhold approval of any proposed projects which cannot meet such criteria. We have a minimum of difficulty on that score, however, as the Texas Highway Department has been kept remarkably free from the influence of pressure groups, and it is seldom that a project proposed for construction is not fully justified on its merits alone.

Our regulations require also that our concurrence in the award of each contract be obtained, except those in the secondary or farm-to-market category, before Federal funds are made available for construction. The award of contract must go to the lowest responsible bidder in every case, and the low bid must be considered to be reasonable. Following the award of contract and start of construction, our inspecting engineers visit each active construction project except farm-to-market projects at least once each month and file a written report concerning it. On farm-to-market projects we make final inspections only. The work accomplished must be satisfactory and in accordance with the plans and specifications. The materials used must have been subjected to laboratory tests and found to meet specification requirements before Federal reimbursement vouchers are issued to the State. Normally the State claims reimbursement for the Federal pro rata share of the cost of the work accomplished on each project once each month. As we have some 175 active primary and urban construction projects throughout the State of Texas, this field inspection work keeps our men traveling. In addition to these construction inspections we also are required to make numerous other types of inspections. The making of maintenance inspections and compiling reports is also a major field activity. This is because the Federal Highway Act requires agreement upon the part of the State to maintain all completed projects in a manner satisfactory to the Commissioner of Public Roads. We have no difficulty in Texas on this score whatever. The maintenance standards of the Texas Highway Department are high, and they are well and favorably known throughout the country.

Since World War II Federal funds have been allocated in three separate and distinct categories and apportioned to the States in specific percentages based upon a formula applicable equally to each State—(1) For projects on the Federal-aid primary highway system, (2) for projects on the Federal-aid secondary or farm-to-market highway system, and (3) for projects on the Federal-aid highway system in urban areas. Recently a fourth category has been added—the interstate highway system, in the furtherance of which national legislation was considered in the last Congress. The interstate highway system is a very limited system of only the most important highways of the United States, totaling approximately 40,000 miles, but which carry a large proportion of the total traffic. Of this total approximately 2,900 miles are in Texas. This system was selected very carefully by the several State Highway Departments and the Bureau of Public Roads and in cooperation with the Department of Defense, both for its economic importance in time of peace and its strategic value to the nation in time of war.

The interstate system is visualized as a coordinated system of a heavy-duty, controlled-access, freeway type of facility, so designed and constructed on rights-of-way of sufficient width that the adequacy of the highway will not be adversely affected by future development along the roadside. To realize this goal, the interstate system

must be fully comparable to the best of the toll roads--but without the tolls!

The evolution of the American highway from the so-called all-weather road of the early years of this century to the multilaned, intricately designed expressways and freeways of today is the natural result of the evolution of the automobile from its early beginnings, and the perfection of mass production methods in its manufacture. Public Roads throughout the years has consistently insisted upon a high standard of quality of both design and construction on all work in which Federal funds have participated. When thinking people get together to formulate plans or procedures, there is always diversity of thought and disagreement that should be settled through debate. If we had no disagreements it would be good evidence that one of the cooperators was lacking in those qualities that make a good engineer. We do have differences in thought here in Texas and in all other states.

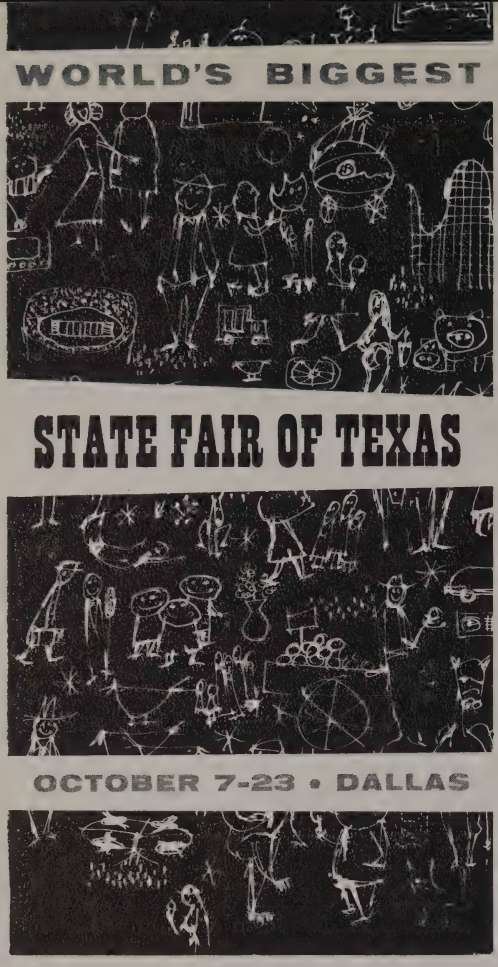
State highway officials are in the best position to judge whether Federal policy, as carried out by the Bureau, is good or bad. In testifying before a Congressional committee in 1953, Charles M. Ziegler, Commissioner of Highways of Michigan and then president of the American Association of State Highway Officials, said ". . . Our association has continuously supported the Federal-aid principle since then (1916). It believes that the over-all coordination of general design characteristics and construction of the various Federal-aid systems is essential from the national point of view.

"The Bureau of Public Roads has played an important part in establishing the highway plant necessitated by the unprecedented growth of motor transport. It has had a very beneficial and stabilizing effect on road policy in many of the states. Through its foresight important physical research and planning have been embarked upon by all of the states. Without it, much of this factual information that is being presented today would not have been available. The Bureau of Public Roads has had a strong influence in bringing about uniformity of practice in highway design and construction throughout the nation. Only through uniformity of the Federal-aid systems of highways have we been able to bind together and to so greatly strengthen the economy of our nation in this motor age."

The part of Public Roads in Texas highway construction has been played in each of the 254 counties of the state and in most of its cities and towns. We have criticized or praised the Highway Department's engineers with, I trust, objective impartiality and have worked to obtain for Texas as fine a highway system as we knew how to produce and, to the initiated, I believe our tracks are evident anywhere in the state. In the main we have worked in close harmony with the engineers of the Highway Department and a strong feeling of mutual trust and respect exists. Were it not so, an organization as small as ours, in an area as large as Texas, could not be effective.

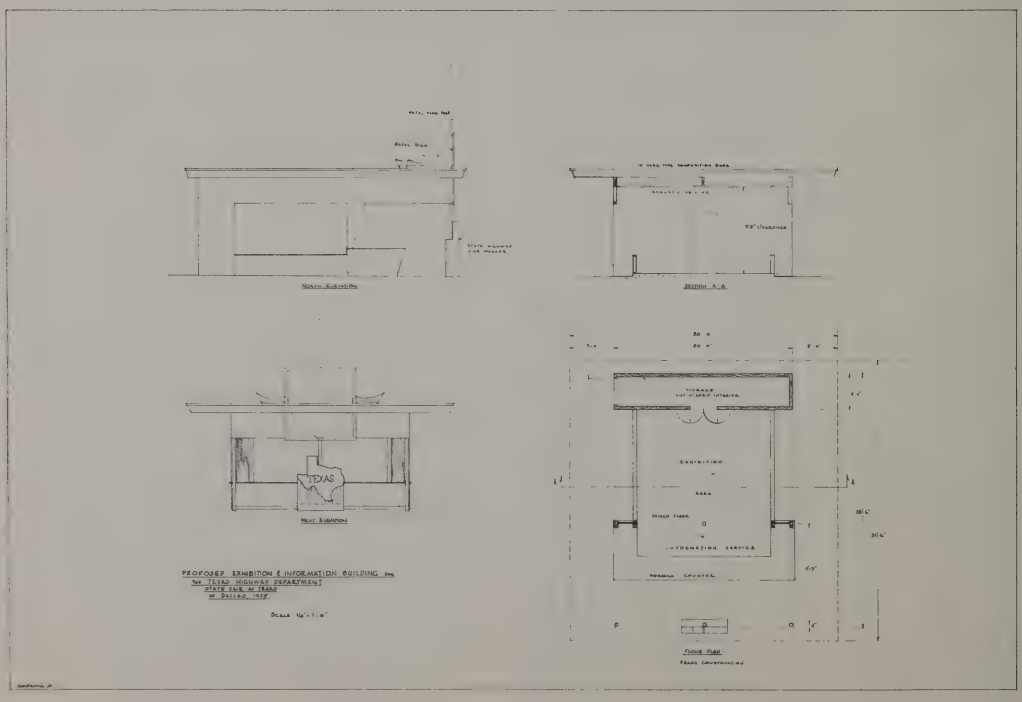
I try to visit each of the 25 state district offices at least once a year to keep posted on how the work currently under construction is progressing, what is being planned for future construction, what the local problems are, and so forth. Of course some districts are much more active than others. The Houston and Dallas districts are perhaps the most active of all, but some of the other districts are not far behind. If more funds were available they could well be much more active, as the need is certainly there.

I know that there are many details of the part we play that I have not mentioned, and numerous phases of our activities that I have not included, but the foregoing will give some idea of the scope of our functions. I hope this rather brief outline will permit them to be better understood.

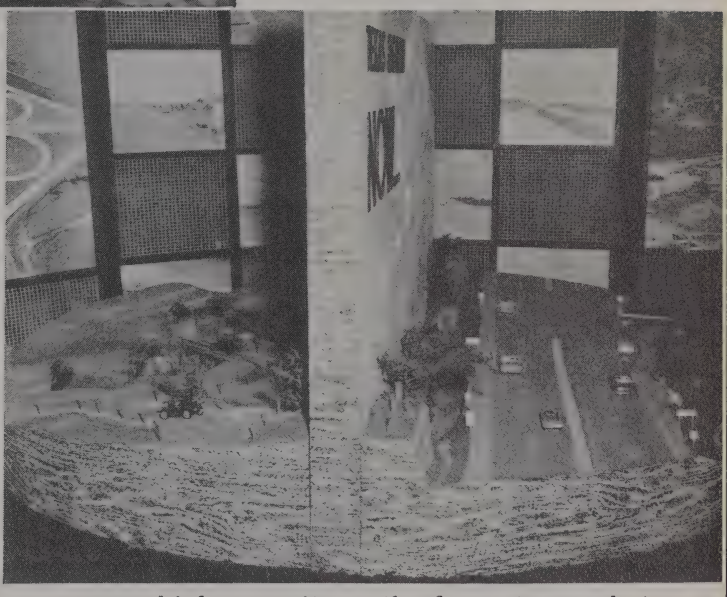


For more than six years the Highway Department has furnished attendants from its Information Bureaus to provide information services for visitors at Texas' annual State Fair. This "temporary" service has become increasingly popular over the years—so much so that this year it was felt a more adequate and permanent building was needed to house it. In former years, a temporary structure of masonite had been set up in front of the administrative offices in the Electrical Building.

James Stewart, Chairman of the Fair, and Joe Rucker and Kenneth Erickson, who are in charge of allocation of space and publicity for the Fair, agreed to construct a permanent information-exhibit building at the same spot using the Highway Department's plans and specifications. Watt Harris, Information and Statistics Division, drew plans for a 15 foot by 30 foot structure, finished in natural redwood, with an 18-foot information service counter. A stone state line marker is used at the front of the building, and the Department's exhibit



Over two million visitors attended the Fair this year—a record attendance. Exhibits are also provided at other events throughout the year.



"Then and now" was the theme of the Highway Department's revolving display at the 1955 State Fair. An exhibit and attendant are available from D-16 to any districts.

is housed in the rear.

The exhibit this year was a revolving scale model of past and present Texas highways. A series of highway scenes on wire screen panels formed the backdrop. On one side the display showed the narrow dirt roads, one-way bridges, vehicles, and the countryside in general as it looked 40 years ago. The other side depicted the same spot as it appears today with a modern four-lane divided highway. Built on a scale of one-eighth inch to a foot, a Model T is being pulled out of a mudhole by a team of horses on the old side of the display, while on the modern side a pickup truck with crates of chickens waits on the farm-to-market road intersection to enter the four-lane state highway.

Tourist Information Bureau personnel staffing the booth were Joe Alexander, Canutillo; Bill Fitzpatrick, Laredo; Bill Naivar, Waskom; Eddie Mathews, Denison; and J. D. Eilers, Austin. The sixteen-day Fair drew a record attendance of 2,600,000 this year. The men from the Bureaus had 25,800 requests for the Official Highway Travel Map, and approximately 300,000 State Fair Programs, in addition to answering uncounted questions verbally, and routing people into and out of Dallas.

. . . I am a former trainee in Texas, consultant engineer of the Iranian Ministry of Roads, cooperating with the United States mission in Iran of the International Cooperation Administration.

The TEXAS HIGHWAYS magazine is appreciated by the Iranian engineers at the Ministry and also by the American and Iranian engineers working with the above-mentioned mission.

Your Twenty-ninth Annual Highway Short Course issue was a "nugget" containing valuable information on up-to-date highway work. We thank you for such precious gifts whenever your generosity can bestow on us. Please do not forget us . . .

J. Afshar Jaffari
Teheran, Iran

To: E. H. Thornton Jr., State Highway Commission Chairman

. . . Having last driven in Texas in 1939, I was pleasantly surprised today driving west from Shreveport. In no state have I seen highways better conceived, designed, built, marked, and maintained.

Points particular: a) Evaluation of curves by suggested speed on markers; b) Clear marking of construction areas; c) Shoulders paved on some roads.

Thanks!

Capt. Carter Bennett, U. S. N.
Naval Base
Key West, Florida

. . . The practice of your department in using pea gravel along the shoulders of the highways is not in the best interests of public safety.

I have just had my second windshield broken by flying particles of this material, the last instance being yesterday on Highway 75 some five miles north of the town of - - -.

H. H. Blair
Houston, Texas

. . . During the month of August of this year, my family and myself took a trip by car through nine of our western states, including Texas. While passing through the northern part of Texas (Amarillo and vicinity) we remarked to ourselves several times about the wonderful condition of the roads in that area, particularly the fact that grass was planted along the side of the road and kept mowed regularly. This was a very great contrast to the conditions that we found elsewhere along our trip.

Please accept our heartiest congratulations for a job well done and we hope that the states surrounding Texas will look to you as a criterion for better roads. . .

Cyril H. Teague and Family
Douglas, Arizona

. . . On last Thursday afternoon, Mrs. Hames and I were going to San Saba and on the Farm to Market road just outside the Camp, we had to stop because the car had heated. We were too far for either of us to go anywhere for water or help otherwise, and while we were waiting, one of your dump trucks saw that we were in trouble and the driver stopped and came over to us and asked if he could be of any help. In a few minutes two other trucks stopped and offered to help us in any way possible.

The gentleman who was driving the dump truck was kind enough to fill the radiator with water and we were able to get back to town and get another car and continue our trip. I asked if I might pay, but he refused to accept anything and said that he had done nothing but furnish the water, and that came from God. We were so impressed by this service that I feel obligated to pass this information on to his superior. What a pity it is that there are not more individuals of his type and character in this world. If there were, we would have no more wars, no need for prisons, and no so-called juvenile delinquency.

We wish every good for this gentleman, whose name I failed to get. . .

Fred Hames, M. D.
Brownwood, Texas

. . . Absolutely nothing we don't like about Texas. We snitched a handful of Texas soil and sprinkled it on the floor at home. The Mrs. stopped complaining when I told her it was good for the rugs. There was courtesy and welcome wherever we went. Wonderful highway system. . .

Chicago, Illinois

. . . My only unfavorable comment is that I wish there were better ways of routing through traffic through such cities as Houston. . .

San Pedro, California

LA BAHIA DEL ESPIRITU SANTO
CHAPEL OF SAN ELIZARIO
FORTRESS PRESIDIO LA BAHIA
NUESTRA SEN